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ABSTRACT

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STUDIES IN LEARNING POTENTIAL

SOCIAL CONTACT, REWARD ACQUISITION, AND ATTITUDE CHANGE TOWARD EDUCABLE MENTAL RETARDATES

by

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SOCIAL CONTACT, REWARD ACQUISITION AND ATTITUDE CHANGE TOWARD EDUCABLE MENTAL RETARDATES

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Abstract

To determine whether social contact (forced versus voluntary) and reward acquisition (winning versus not winning) were differentially effective in influencing positive attitude change toward educable mentally retarded children (EMRs), 68 nonEMR males in the fourth through sixth grades were asked to select either a same-sex EMR or nonEMR as a partner for a bean-bag toss game to help them win a prize. Subjects were able to select the EMR voluntarily or were forced to do so by the experimenter. The game was rigged so the experimenter was able to manipulate winning and not winning the game. Baseline attitude data was collected two weeks prior to the experimental task (T-1), immediately following the task (T-2) and two weeks later (T-3). The results indicated that reward acquisition was more effective than social contact on improving T-2 attitude scores, but that voluntary social contact was more effective in raising T-3 scores. The findings were discussed in terms of the desirability of integrating EMRs with nonEMRs.

SOCIAL CONTACT, REWARD ACQUISITION AND ATTITUDE CHANGE TOWARD EDUCABLE MENTAL RETARDATES[2]

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In attempting to improve the attitudes of average-intellect (nonEMR) school children toward their retarded peers (EMRs), various investigators have assigned a critical role to social contact between the two groups. For example, Chennault (1967), as well as Rucker and Vincenzo (1970), had their retarded and nonretarded subjects participate together in school-related activities. Both investigations indicated that this procedure was successful in its intended aim - to improve attitudes toward EMRs. Similarly, McDaniel (1970) found that having both groups of children interact together in basketball and square dancing resulted in generally improved social acceptance of EMRs by their average-intellect peers. McDaniel observed, however, that although in most instances social acceptance improved, in some instances there was an increase in social rejection toward the retarded.

A number of nonexperimental studies also have examined the relation between social contact and attitudes toward the retarded. Jaffe (1966) noted that subjects who indicated that they had contact with the retarded express more favorable attitudes than those subjects who reported no such contact. Strauch (1970), however, failed to find social contact to be a significant determinant of attitudes

toward the retarded.

Similar contradictions also have appeared in the literature concerning the effects of institutional tours on subsequent attitude change. Cleland and Chambers (1959) and Sellin and Mulchahay (1965) noted that tours were capable of eliciting attitude shift, but that not all the change was in the positive direction.

A summary of this literature reveals that although social contact appears to be an influential variable in affecting attitude change, the precise manner in which it operates has not been well specified. Those studies that attempted to assess its importance may inadvertently have confounded social contact with other variables, not controlled by the experimenters, to produce the undesired negative attitude change. The present investigation was an attempt to refine the variable of social contact insofar as it relates to positive attitude change toward EMRs in school.

In a previous attempt to isolate the parameters of social contact as they influence positive attitude change, Gottlieb (1971) had same-sex, same-age triads of children participate together in a ringtoss game. In each triad, one nonEMR child who had previously been pretested for his attitudes toward EMRs was designated as the subject and was asked to choose one of the other two children as a partner to play the ringtoss game. The subject was informed which of the two children was in the regular classes and which one was in the special class for "children who had difficulty learning." The subject was then told that he and his partner, whomever he chose,

would each be allowed three chances to throw the rings on the stick and if together they circled the stick four times they would each receive a monetary prize. Subjects were posttested immediately after they played the game. The results indicated that subjects who selected an EMR and won the money improved their attitude scores significantly more than subjects who chose an EMR but did not win. No difference was found between subjects not selecting an EMR and those who selected an EMR but didn't win.

The present investigation was both an extension and a replication of Gottlieb's report. In the previous study, each subject was asked to state which of two children he would prefer to select as a play companion. The subject then made his choice and played with that child. Would comparable attitude gains have obtained had the subject been forced to play with an EMR against his wishes? One way to approach this question is offered by Rotter's conceptualization (1954; 1967). He theorized that Behavior Potential - in this instance, attitude change - is a function of certain Expectancies (E) and Reinforcement Values (R.V.) which accrue to an individual. In Rotter's scheme, E was defined as the probability with which an individual expects reinforcement to occur, while Reinforcement Value was defined as the degree of an individual's preference for the reinforcement to occur. Therefore, from the theoretical perspective, it is reasonable to assume that an individual who voluntarily selects an EMR as a play companion has a higher expectancy that his behavior will lead to a reinforcement than does the individual who does not voluntarily choose to play with an EMR.

The reinforcement available may be either internal, i.e., the fulfillment of a socially acceptable behavior, or external, through the receipt of a prize from an adult or peer. Consequently, an individual who selects to interact with an EMR voluntarily should be more amenable to positive attitude change toward the retarded. Referring back to the previously cited studies on attitude change toward the retarded, it is possible that subjects who reported positive attitude change may have perceived their interaction to be voluntary, whereas negative attitude shift subjects may have perceived this interaction to be not of their own volition, but rather forced upon them. The first purpose of this study, then, was to examine the role of forced and voluntary social interaction as a determinant of attitude change.

A second concern of this study was to explore the manner in which reward can influence a subject to change his attitude toward EMRs.

Previously, (Gottlieb, 1971) a subject's acquisition of a monetary reward was contingent upon both his own and his partner's ability to throw rings on a stick. When he and his partner circled the ringtoss stick a designated number of times they each received a prize. As a result, the acquisition of a reward was possibly confounded by the retarded partner's ability on the task. In the present study, success on the task was manipulated by the experimenter who randomly assigned subjects to either a win or a no win condition. If, as Rotter suggested behavioral potential is, in part, influenced by the subject's degree of preference for a reward to obtain, subjects who receive a valued reward from the

experimenter should express greater positive attitude change than subjects not receiving experimenter-supplied reward, all other things being equal.

An additional important concern in attempts to change attitudes toward retarded children is whether positive changes produced by an experimental treatment will persist over a period of time beyond the completion of the experiment. Rucker and Vincenzo (1970) replicated Chennault's (1967) study and found that positive attitude change was not maintained 30 days after the completion of the experimental treatment. However, their study involved a single experimental treatment for all subjects. The present investigation was an attempt to determine whether various experimental treatments were differentially effective over a period of time.

In this investigation the following hypotheses were tested: (1) Voluntary social interaction would result in significantly greater positive attitude change than would forced social contact, (2) Social interaction leading to the receipt of experimenter provided reward would result in significantly greater positive attitude change than would interaction in which no experimenter reward was forthcoming, (3) These predicted positive attitude changes would be maintained two weeks after the experimental treatment.

Method

Subjects

Ninety-four boys attending grades four through six in three New Jersey public schools constituted the initial sample for this study. All subjects were presumed to be of at least average

intelligence. Although IQ data were not available, only those subjects identified by their teachers as doing passing schoolwork, and as not being candidates for the special class, were recruited. Each of the schools involved in the study had at least one class for EMR children.

Instruments

Two questionnaires designed to measure attitudes toward boys in the special class were used. The first was a rating scale composed of fifteen pairs of bipolar adjectives which subjects had to rate along a five point continuum for the concept "boys in the special class while at play." The second questionnaire was an attitude scale consisting of 16 items for which subjects had to indicate whether or not they agreed that each of the items accurately described boys in the special class. This questionnaire was modified and extended from a scale developed by Coopersmith (1967). Additional data regarding construction of the attitude instruments have appeared elsewhere (Gottlieb, 1972).

Procedures - pretesting

Within each school groups of boys in grades four through six were administered the two attitude questionnaires (T-1). Respondents who failed to follow instructions correctly were eliminated from the experimental sample. From the pool of remaining respondents, 68 subjects were randomly selected to participate in the experimental treatment which occurred two weeks after pretesting.

Procedures - experimental treatments

All experimental testing was performed in a separate testing room located in an isolated area of the school. Experimental triads were formed consisting of a subject, an average-intellect peer from a different grade level, and a boy from that school's intermediate level class for EMRs. After the experimenter had introduced the three boys to each other he showed them a bean-bag game and told them that he wanted to find out how accurately boys their age could toss a bean-bag at a hidden target. The game itself consisted of throwing a bean-bag over a vertical barrier which stood in front of a bull's-eye target drawn on the floor. The object of the game was to throw the bean-bag over the barrier and land as close to the center of the bull's eye as possible. The boys were unable to see where their tosses landed and were dependent upon the experimenter to inform them as to their score on each attempt. The experimenter, therefore, was able to manipulate scores in a predetermined manner. After demonstrating the game, the experimenter took the subject aside and issued the following instructions:

"I am going to give you a chance to play this bean-bag game and maybe win a prize, like some money. But in order to play the game you have to pick one of the two boys here as a partner to play with. You can pick either ___(name)___ (pointing to one of the boys) who is in class ___(4th, 5th, 6th)___ or else you can pick ___(name)___ who is in the special class for children who have difficulty learning. You and your partner, whomever, you

choose, will each get three chances to throw the bean-bag in the circle. On any one toss you can get from zero to five points depending upon which circle the bean-bag lands in. If it lands outside of the circle you don't get any points. If you and your partner get twenty points between you, you win the game and you get a prize. The most points you can get by yourself is fifteen, so no matter how well you do you can't win a prize unless your partner does pretty well also. O.K., is that clear? Now, who do you want to pick to play with?"

Subjects who selected an EMR were allowed to play with him. These subjects constituted the voluntary social contact group. On the other hand, when a subject selected the nonEMR boy as a partner, the experimenter "studied" some papers which he was carrying and informed the subject that according to his list he was scheduled to play with the special class child. Thus, if the subject wanted to play the game he had to play with the EMR. In all instances the subjects agreed to this condition. These subjects constituted the forced social contact group.

Within each contact group, subjects were randomly assigned to either a win or no win condition. In both the win and no win conditions, the subject went first and the experimenter manipulated scores so that his EMR partner's last toss either "won" or "lost" the game for the team. Therefore, the last toss was crucial and magnified the importance to the subject of the EMR's performance. To ensure that the subject realized this, just prior to the EMR's last throw, the experimenter remarked that the upcoming toss would either win

or lose the game. Immediately following the game winning subjects were given a prize of 25¢. All subjects were then asked to fill out the attitude questionnaires as they had done two weeks previously (T-2).

Procedures - posttesting

Two weeks following the experimental manipulation, the experimenter assembled the pretest groups and once more administered the attitude instruments (T-3).

Results

The design of this investigation necessitated a 2 x 2 x 3 (Contact, Reward, Trials) analysis of variance with repeated measures on the last factor. However, preliminary analysis of the pretest (T-1) data for the rating scale indicated that the four groups of subjects were not initially equal with respect to their pretest attitude scores. A significant interaction emerged from the 2 x 2 (Contact, Reward) factorial analysis of the T-1 data for the rating scale (F = 5.40, df = 1/64, $p < .05$). Furthermore, since a primary intention of this study was to examine the interaction of the Trials (within-subject) factor with the two between-subject factors, analysis of covariance with repeated measures was an inappropriate statistic to employ in order to equate the T-1 data. This is so because covariance adjustments operate only on the between-subject effects. They do not affect the within-subject effects because the covariate is constant across all levels of that factor (Winer, 1962). Consequently, it was decided to employ separate covariance analyses for the data from Trials 2 and 3. In the first of these analyses, Trial 1 data was treated as the

covariate, while in the second analysis, Trials 1 and 2 were the covariates.

The results of the 2 x 2 (Contact, Reward) analysis of covariance for the Trial 2 data for the rating scale revealed one significant finding; a main effect for Reward (F = 4.61, df = 1/63, $p < .05$). As is evident from Table 1 which presents both the unadjusted and adjusted means for the Trial 2 and 3 data, the significant Reward effect is attributable to the more favorable attitude scores of those subjects who received a reward when playing with an EMR, regardless of whether their choice was voluntary or forced upon them.

In order to examine the influence of the various treatments on the stability of attitude change, a 2 x 2 (Contact, Reward) analysis of covariance was performed on the Trial 3 data from the rating scale with Trials 1 and 2 being the covariates. Here, the only significant finding that appeared was a Contact main effect (F = 4.37, df = 1/62, $p < .05$). Further inspection of Table 1 indicates that voluntary social contact resulted in more favorable attitude change two weeks after the experimental treatment.

Data from the second attitude questionnaire were analyzed in a 2 x 2 x 3 (Contact, Reward, Trials) mixed analysis of variance since there were no statistically significant differences among the four groups with respect to their pretest attitude scores. The only significant finding which appeared from this analysis was a main effect for Trials (F = 14.91, df = 2/128, $p < .001$). Further analysis of this finding indicated that T-2 was significantly higher than both T-1 (t = 5.45, df = 128, $p < .01$) and T-3

(t = 5.02, df = 128, $p < .01$).

Insert Table 1 about here

A summary of the means and standard deviations for both attitude questionnaire administrations for each trial appears in Table 2 and indicates that on the data for both attitude instruments were generally in the same direction.

Insert Table 2 about here

Discussion

The findings of this study generally supported the first hypothesis that voluntary social contact would result in significantly greater positive attitude change than would forced social contact. The differences in favor of the voluntary contact group were significant for the T-3 data and were in the predicted direction for the T-2 data (F = 2.60, df = 1/63, $p < .15$). The data for the "agree-disagree" rating scale for the contact main effect were also in the predicted direction. Interestingly, social contact alone was sufficient to raise attitude scores regardless of whether the contact was forced or voluntary. Although the present study did not include a control group who received the T-2 questionnaire administration without an intervening treatment, previous data collected on highly similar instruments indicated that attitude scores do not increase in the absence of an experimental treatment (Gottlieb, 1971). The results of the present study

suggest, therefore, that positive attitude change of normal children toward retarded children resulting from actual contact is most durable where the normal child chooses to interact.

Although attitude scores improved immediately following the acquisition of the experimenter-supplied reward in accord with the theoretical prediction of the second hypothesis, the reward was not as effective as voluntary social contact in maintaining attitude gains. Apparently, the internal rewards resulting from selecting a retarded child to play the game with were of greater strength, and less subject to extinction, than token reinforcement. The significant decrease in attitude scores from T-2 to T-3 on both attitude instruments failed to provide support for the third hypothesis. It is conceivable that a more powerful experimental manipulation of the variables of the present study would be required to produce an effect over time.

These data lend support to the efforts of schools which have been directed toward integrating retarded children with average-IQ peers in a variety of school settings and activities. However, the durability of the voluntary, as opposed to the forced, interaction condition indicates that rather than unilaterally assign retarded children to classes with non-retarded children, schools may be well advised to attempt to involve normal peers in some of the placement aspects, when feasible. One possible method to accomplish this might be to select peer leaders from a target class and present them with the opportunity to help children who are having difficulty in school. The peer leaders could be informed that certain children enrolled in the special

class were going to be placed in their class and might have difficulty in making friends. Therefore, volunteers were being sought to befriend these children so that they might make a better adjustment to their new class. The positive attitudes displayed by the peer leader toward the retarded child would likely be imitated by the other class members since an important determinant of imitation is the status and prestige of the model (Bandura, 1968).

Two related questions may be answered by further research. In the present study, normal children acquired reward through the joint effect of their own and their retarded partner's efforts. Will greater attitude changes result where the reward is obtained almost solely through the efforts of the retarded partner? A second concern is whether the forced contact situation validly constituted a "forced" situation. Although subjects in the forced condition had the option of not having to play the game at all, none of them exercised it. Thus, they actually did not participate with the retarded child against their will. It is likely that the allure of playing a game overcame their reluctance to play with a retarded child. A less attractive interaction situation, such as performing a tedious work task, might have resulted in a number of children declining to participate. Requiring these children to participate would create a more valid forced-contact group possibly resulting in greater differences between attitude of voluntary and forced-contact groups. Both of these questions require investigation.

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FOOTNOTES

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TABLE 1

Adjusted and Unadjusted Means for Trials 2 and 3 on Rating Scale

Mean	Conditions			
	Voluntary Win		Voluntary No Win	
	T-2	T-3	T-2	T-3
Unadjusted	54.94	50.29	54.12	52.94
Adjusted	56.10	50.47	53.30	50.21
	Forced Win		Forced No Win	
	T-2	T-3	T-2	T-3
Unadjusted	55.35	49.53	50.35	47.24
Adjusted	53.96	47.79	51.39	49.53

TABLE 2

Means and Standard Deviations for Attitude Scores

Conditions

	Voluntary Win			Voluntary No Win		
	Rating Scale			Rating Scale		
	T-1	T-2	T-3	T-1	T-2	T-3
$\bar{X}$	46.18	54.94	50.29	49.88	54.12	52.94
SD	6.08	5.80	7.27	6.09	4.97	4.83
	Agree-Disagree Scale			Agree-Disagree Scale		
	T-1	T-2	T-3	T-1	T-2	T-3
$\bar{X}$	9.00	10.94	9.88	9.88	11.94	11.35
SD	2.43	2.78	2.56	2.99	2.65	3.12

	Forced Win			Forced No Win		
	Rating Scale			Rating Scale		
	T-1	T-2	T-3	T-1	T-2	T-3
$\bar{X}$	50.94	55.35	49.53	46.42	50.35	47.24
SD	8.48	7.60	8.64	7.41	6.38	7.24
	Agree-Disagree Scale			Agree-Disagree Scale		
	T-1	T-2	T-3	T-1	T-2	T-3
$\bar{X}$	8.82	10.29	9.00	9.35	10.35	9.82
SD	2.33	2.89	3.13	3.12	2.42	2.38